

CLAIMS

What is claimed is:

SUB A17

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- 1 A method of collapsing data packages stored in a data transfer and  
5 synchronization system, the method comprising:
  - providing a first data package having a first transaction including an  
identification number, an action, and a plurality of fields each with an attribute  
representing change information;
  - providing a second data package having a second transaction made  
10 subsequent to the first transaction, the second transaction having an identification  
number, an action, and a field with an attribute;
  - determining whether the identification number of the second transaction  
corresponds to the identification number of the first transaction;
  - determining whether the field of the second transaction corresponds to one of  
15 the fields of the first transaction;
  - combining, when the identification numbers of the first and second  
transactions correspond to one another and the field of the second transaction  
corresponds to one of the fields of the first transaction, the first and second data  
packages to define a combined data package having a combined transaction with  
20 the identification number; and
  - replacing the second data package with the combined data package.
2. The method of claim 1 further comprising:  
deleting the first data package.
- 25 3. The method of collapsing data packages of claim 1, wherein combining the  
first and second data packages comprises:
  - determining the type of action of the second transaction;
  - defining, when the action of the second transaction is "Add," the combined  
30 transaction to include an "Add" action and the corresponding field and the attribute of

the second transaction;

defining, when the action of the second transaction is "modify," the combined transaction to include an "add" action and the corresponding field and the attribute of the second transaction; and

5 defining, when the action of the second transaction is "delete," the combined transaction to include a "delete" action and the corresponding field.

4. A method of collapsing data packages stored in a data transfer and synchronization system, the method comprising:

10 providing a first data package having a plurality of first transactions each including an identification number, an action, and a plurality of fields each with an attribute representing change information;

providing a second data package having a second transaction made subsequent to the first transactions, the second transaction having an identification number, an action, and a field with an attribute;

15 determining whether the identification number of the second transaction corresponds to one of the identification numbers of the first transactions;

identifying, when the identification number of the second transaction corresponds to the one of the identification numbers of the first transactions, the one first transaction;

20 determining whether the field of the second transaction corresponds to one of the fields of the identified first transaction;

combining, when the identification numbers of the second transaction and the identified first transaction correspond to one another and the field of the second transaction corresponds to one of the fields of the identified first transaction, the first and second data packages to define a combined data package having a combined transaction with the identification number; and

replacing the second data package with the combined data package.

30 5. A method of collapsing data packages stored in a data transfer and

synchronization system, the method comprising:

collapsing a first plurality of data packages to define a first base data package associated with a first device, each data package having a transaction, all of the transactions having been applied to data in the first device;

5 collapsing a second plurality of data packages to define a second base data package associated with a second device, each data package having a transaction, all of the transactions having been applied to data in the second device; and

10 collapsing a third plurality of data packages to define a third base data package associated with a third device, each data package having a transaction, all of the transactions having been applied to data in the third device.

6. A base rolling apparatus for collapsing data packages stored in a data transfer and synchronization system, the base rolling apparatus situated in a device engine on a server coupled to a data network, the apparatus comprising:

15 a first providing part which provides a first data package having a first transaction including an identification number, an action, and a plurality of fields each with an attribute representing change information;

20 a second providing part which provides a second data package having a second transaction made subsequent to the first transaction, the second transaction having an identification number, an action, and a field with an attribute;

a first determining part which determines whether the identification number of the first transaction corresponds to the identification number of the second transaction;

25 a second determining part which determines whether the field of the second transaction corresponds to one of the fields of the first transaction;

30 a third combining part which combines, when the identification numbers of the first and second transactions correspond to one another and the field of the second transaction corresponds to one of the fields of the first transaction, the first and second data packages to define a combined data package having a combined transaction with the identification number; and

a replacing part which replaces the second data package with the combined data package.

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